

# Decadal Prediction and Predictability in the Mediterranean

On-going work in collaboration with :

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# The climate prediction exercise

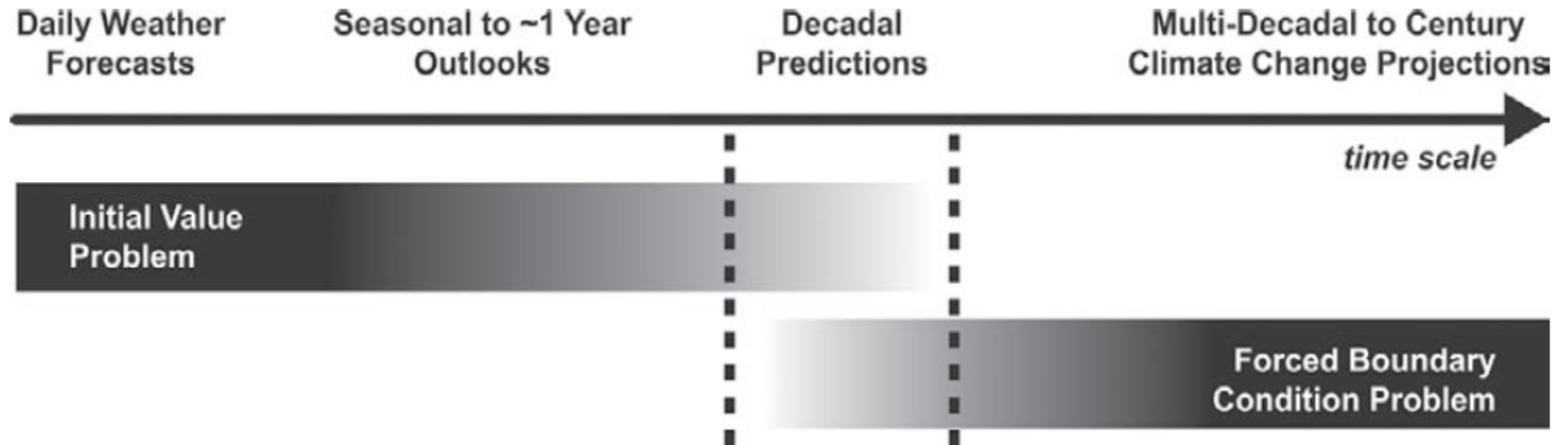


Fig. 2 of Meehl et al. (2009, BAMS)

# Which models ? Which data ?

## CMIP5 climate predictions :

- HadCM3
- MRI-CGCM3
- CANCM3
- MIROC4
- MIROC5
- Ec-Earth v2

To be added : MPI and GFDL contributions

## Observational data:

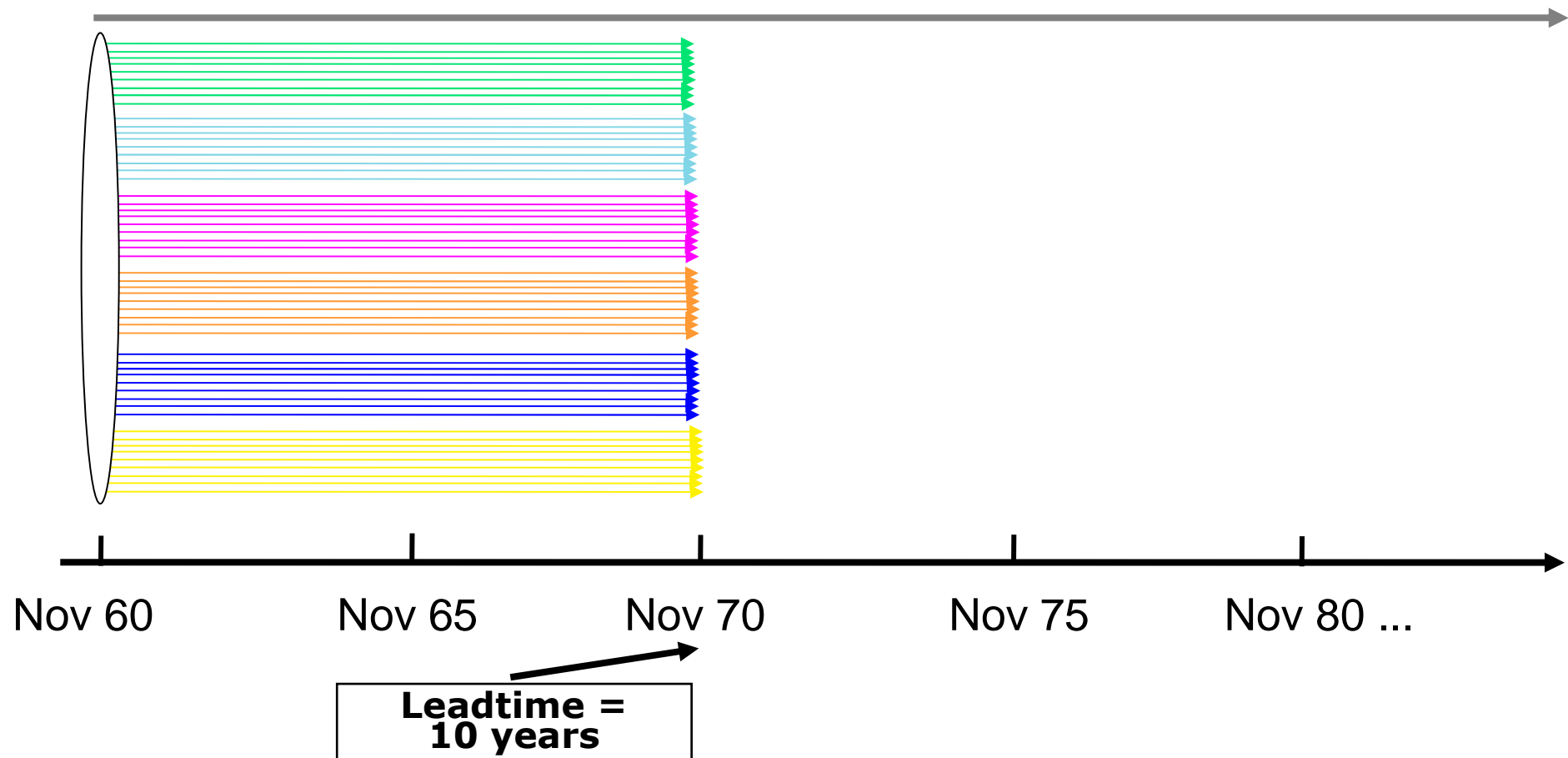
Temperature : GHCN + ERSST

Precipitation : GPCC

# The experimental setup

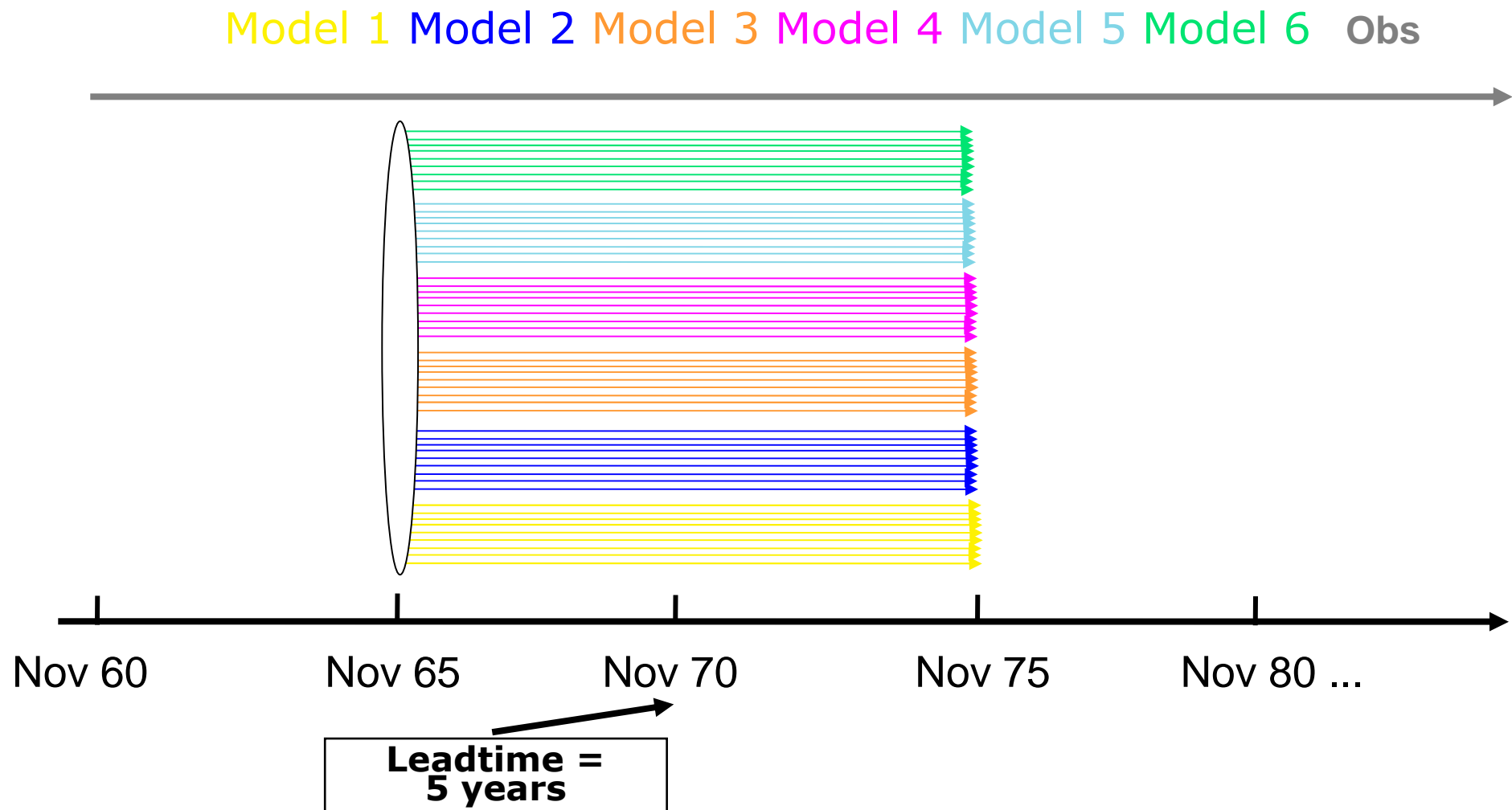
Multi-model ensemble system with coupled initialized GCMs

Model 1 Model 2 Model 3 Model 4 Model 5 Model 6 Obs



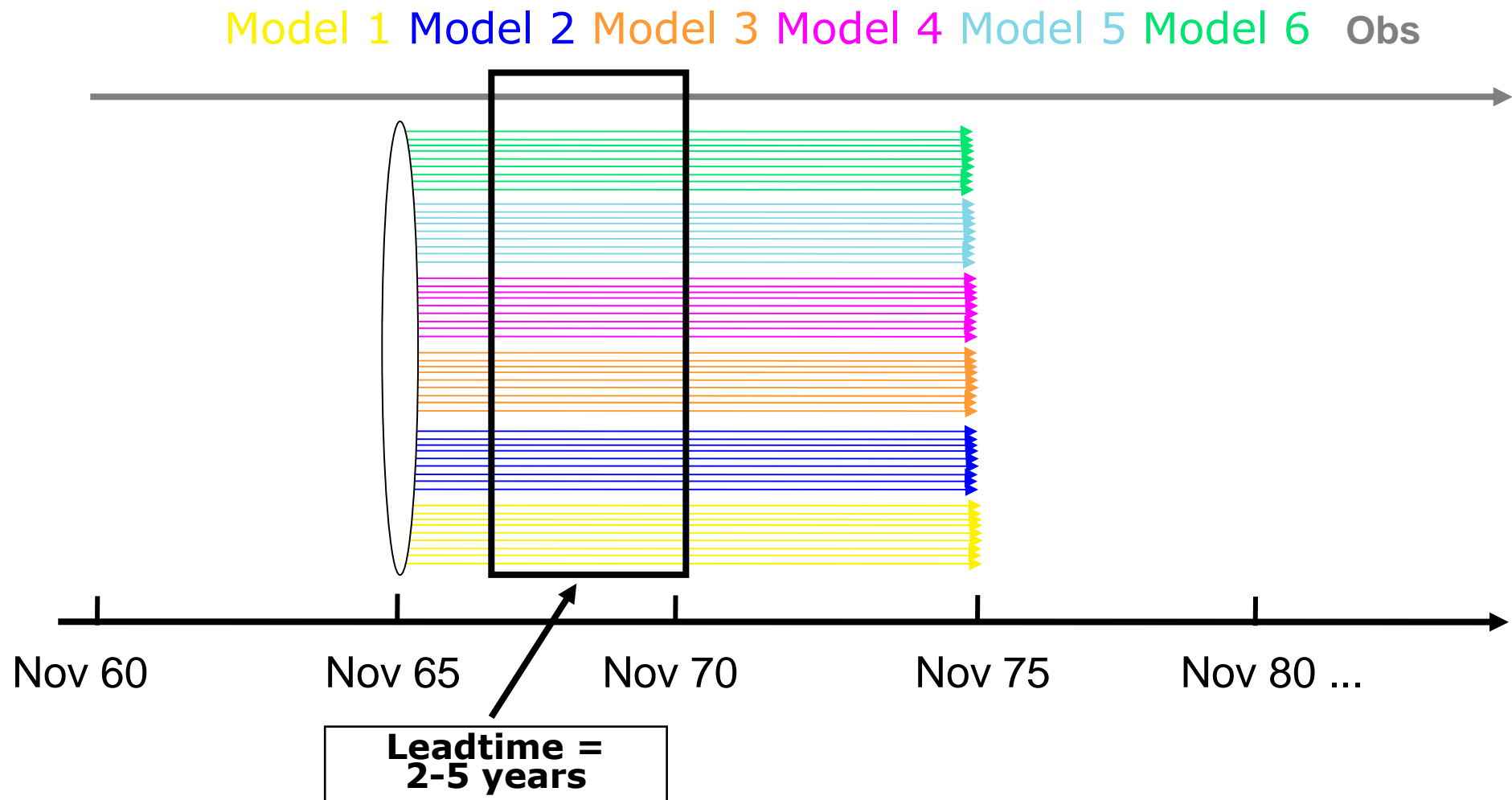
# The experimental setup

Multi-model ensemble system with coupled initialized GCMs



# The experimental setup

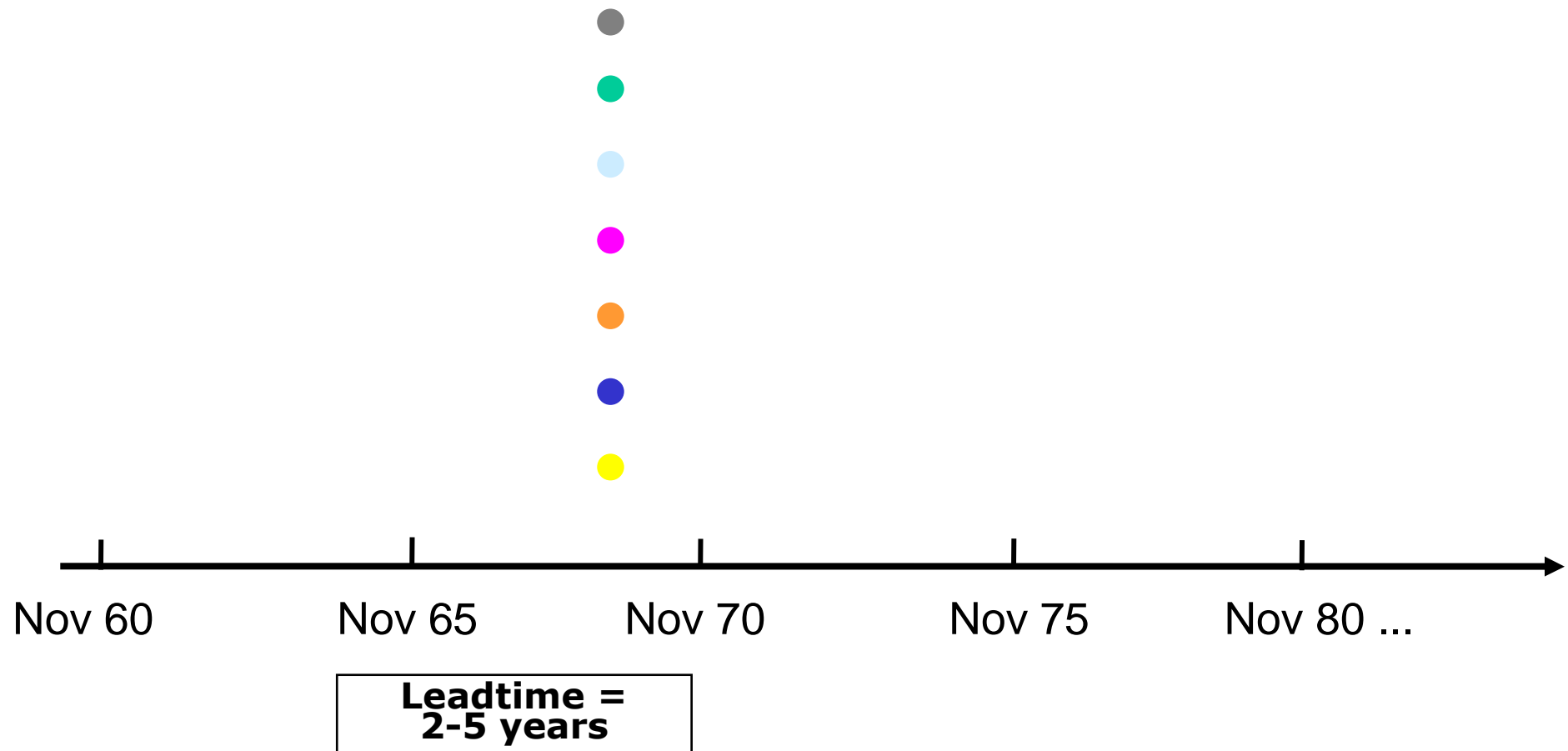
Multi-model ensemble system with coupled initialized GCMs



# The experimental setup

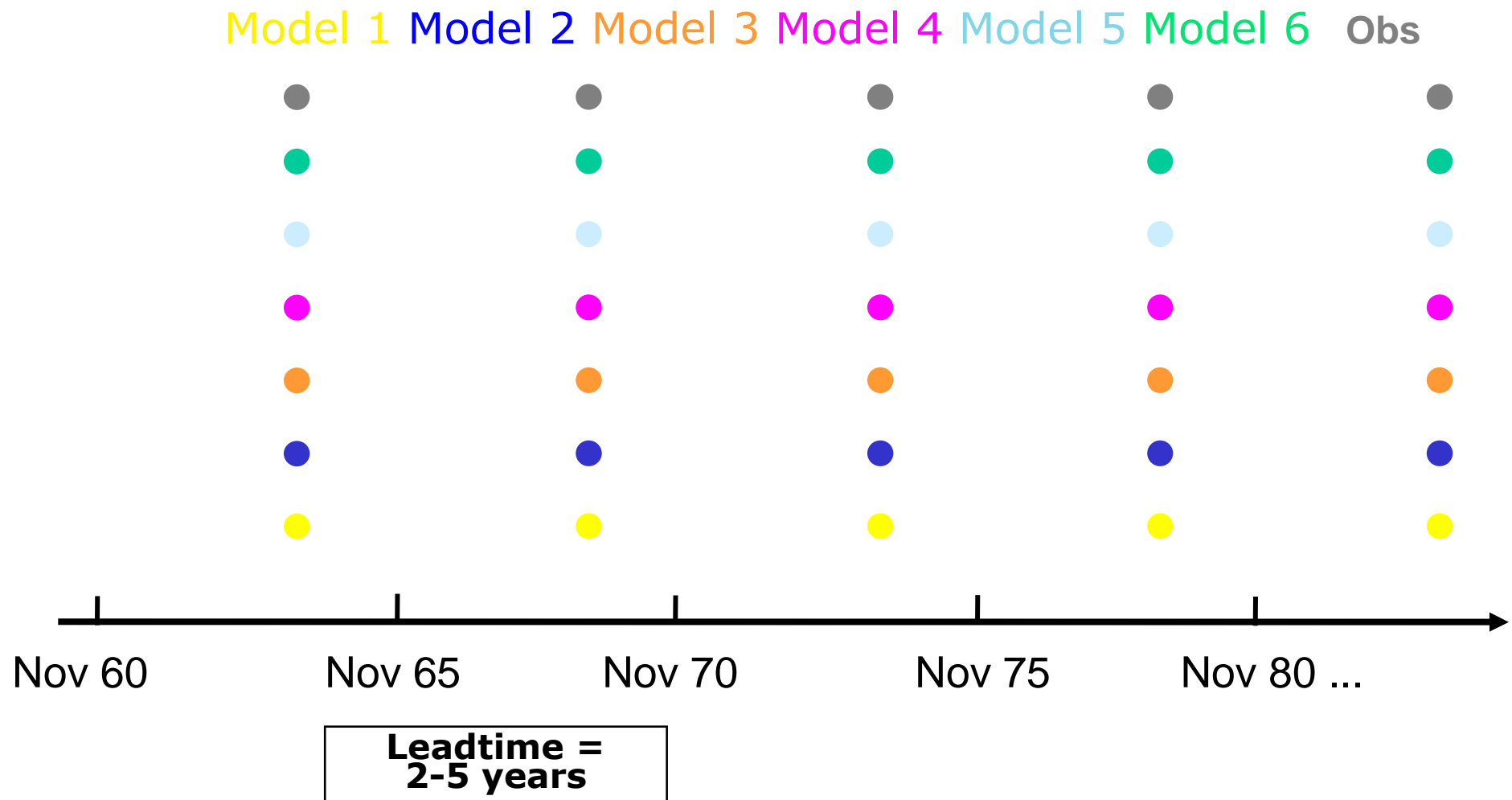
Multi-model ensemble system with coupled initialized GCMs

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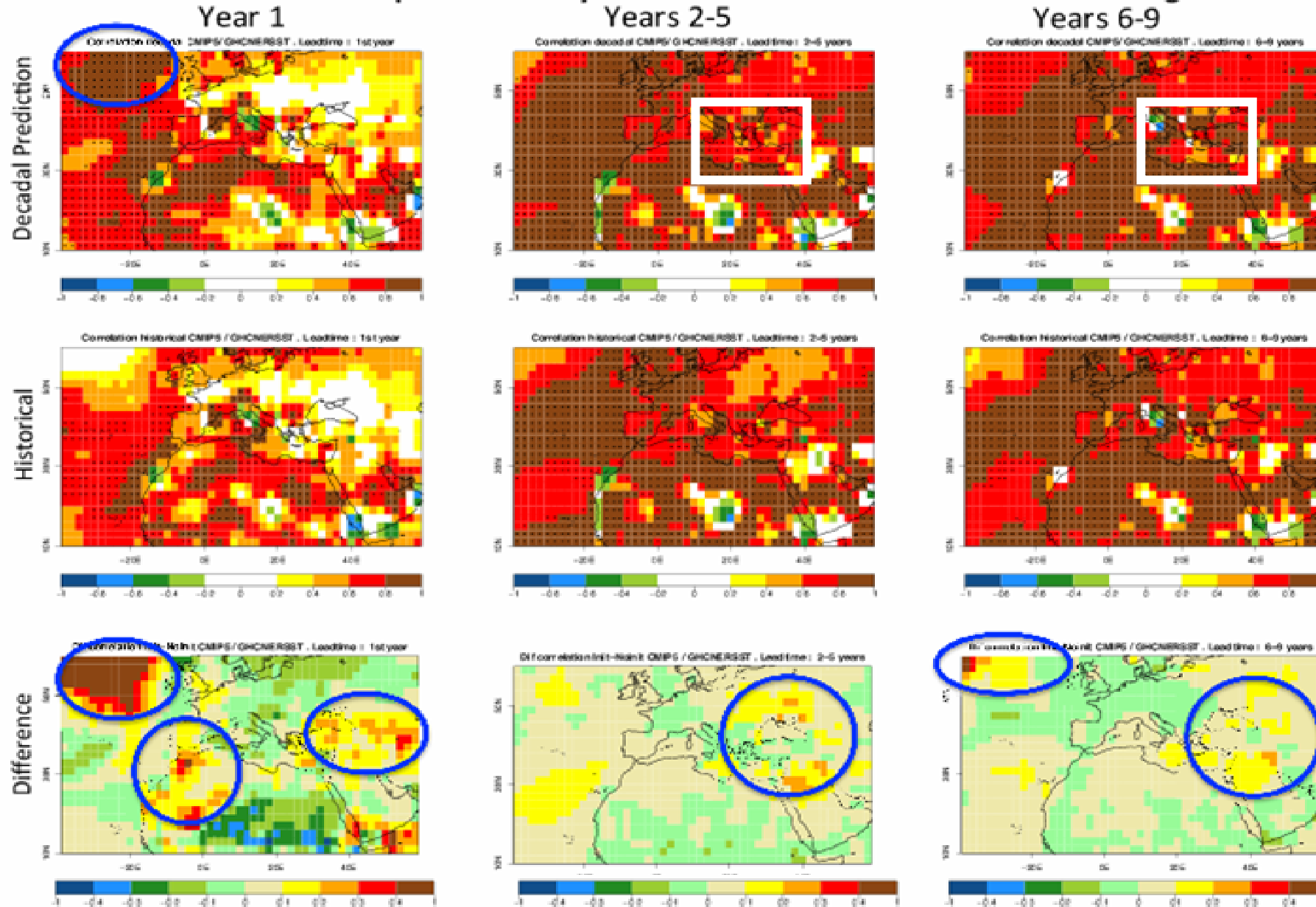
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Multi-model ensemble system with coupled initialized GCMs

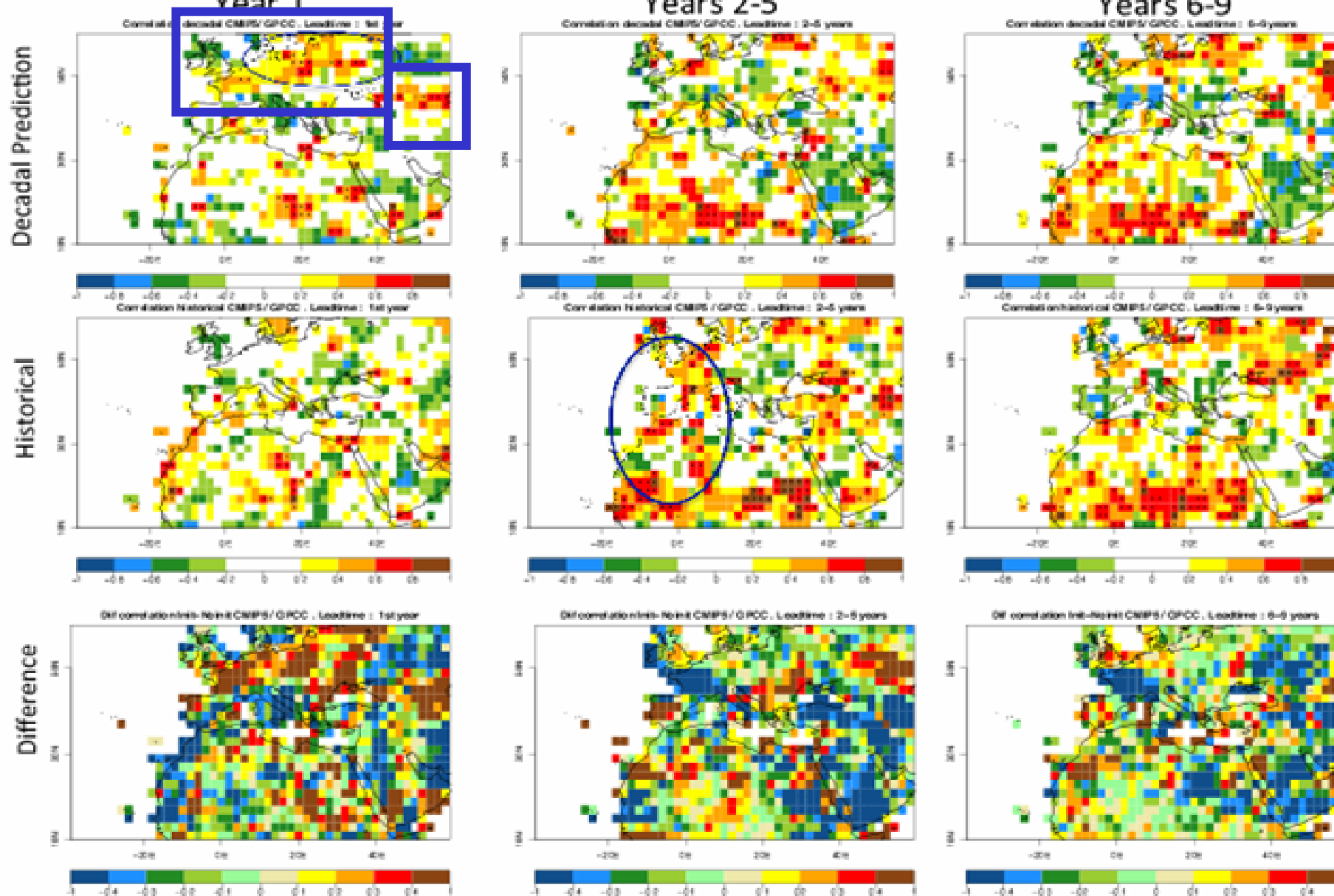




## Annual Mean Temperature – 5 year starts -Skill at various lead times – Figure 2

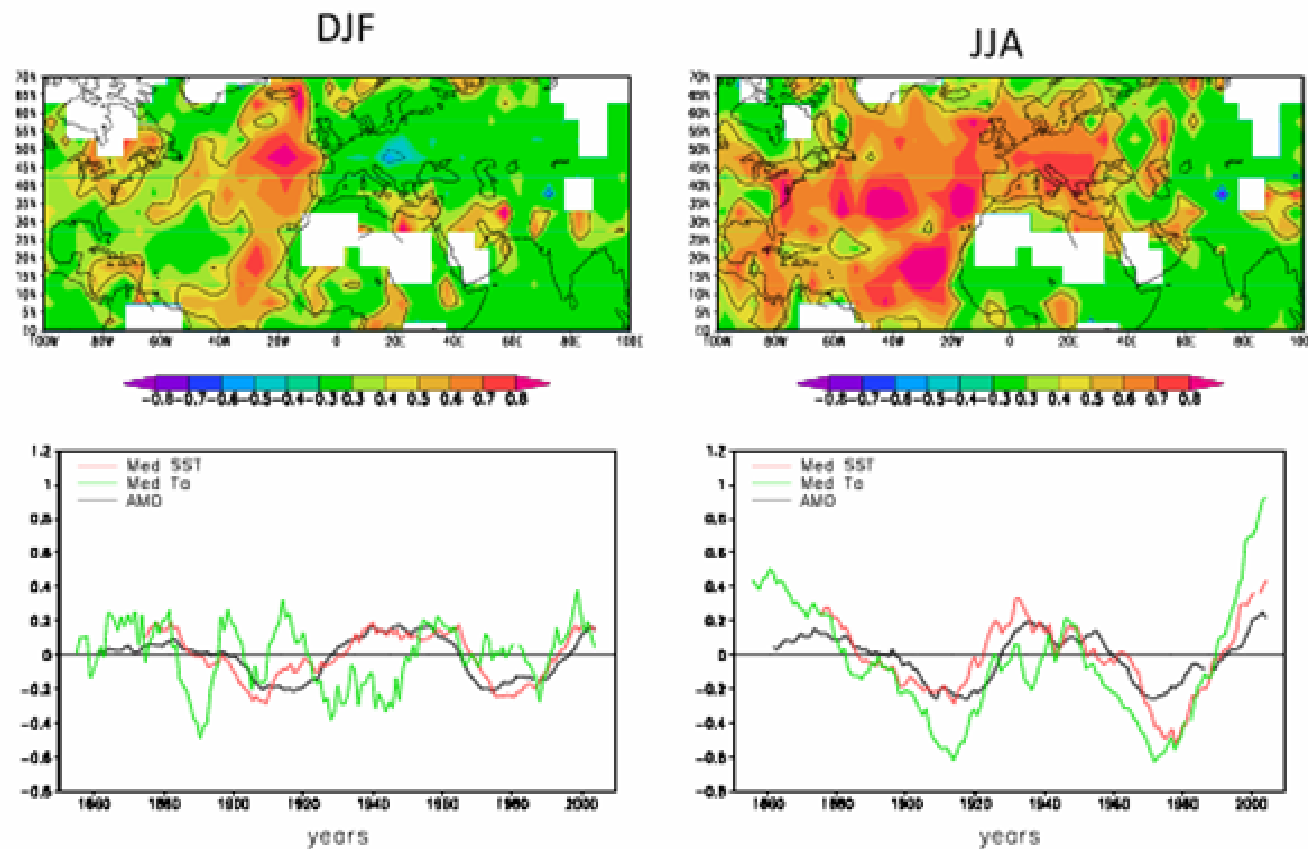


## Annual mean Precipitation – 5 year starts - skill at various lead times – Figure 1



# Role of the AMO in this skill ?

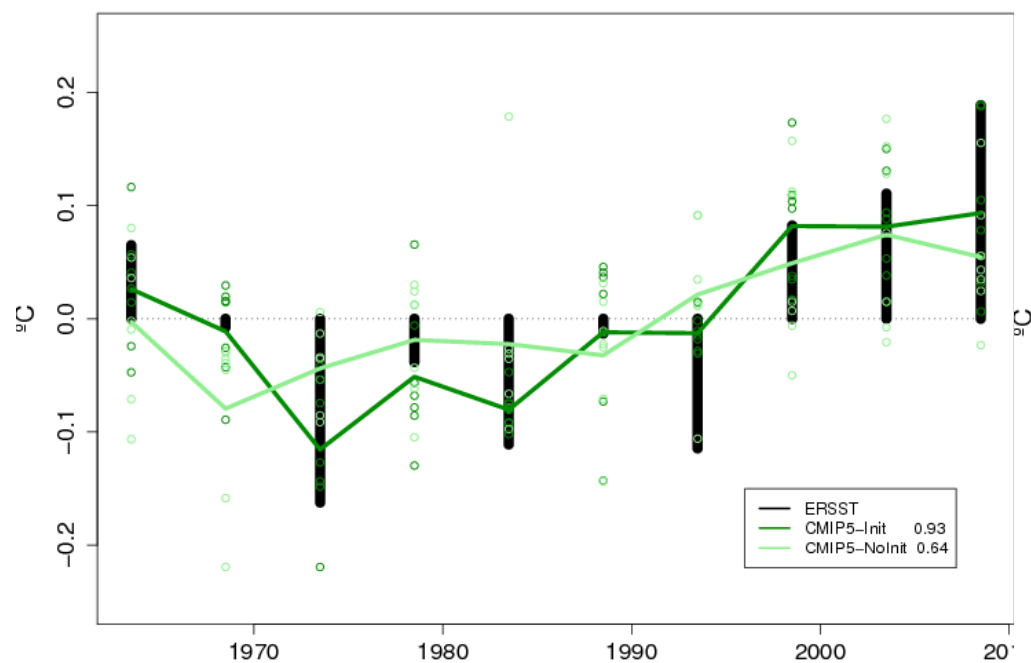
Observationally based AMO-Temperature correlation patterns



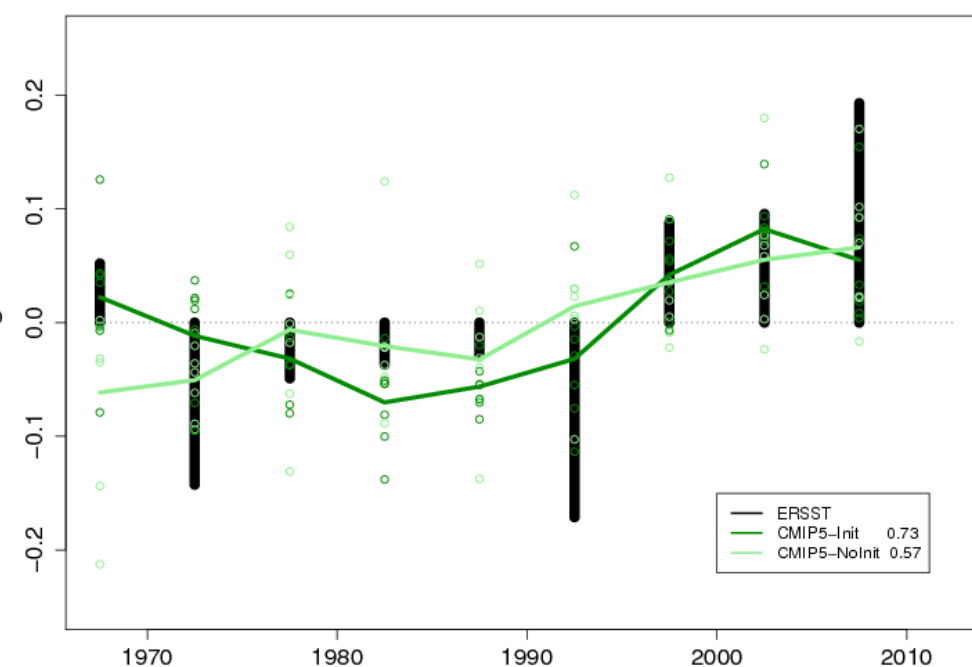
(Mariotti and Dell'Aquila, 2011)

# The predicted AMO

AMO index / annual (Jan-Dec) / 2-5yr average

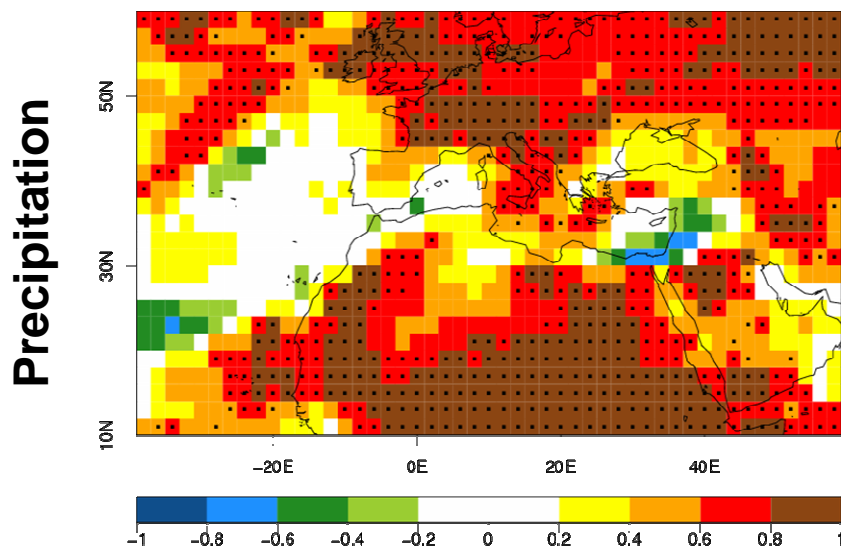


AMO index / annual (Jan-Dec) / 6-9yr average

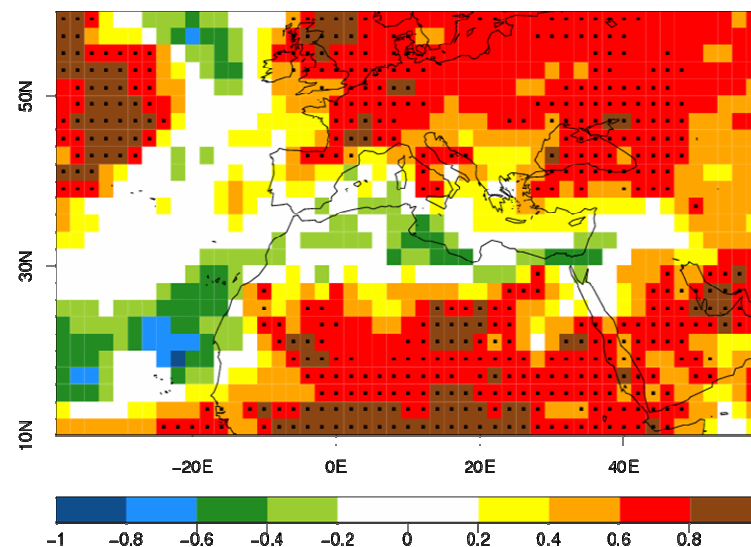


# Correlation predicted AMO / precipitation

Leadtimes : 2-5 years



Leadtimes : 6-9 years



## What's next ?

- ✱ **RMSE scores**
- ✱ **Yearly instead of 5-year start dates**
- ✱ **Comparison with DePreSys yearly hindcasts**
- ✱ **Seasonally stratified analysis**
- ✱ **Detrending + filtering out the NAO effect => detect the ENSO impact at least for short leadtimes**